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BIRDS OF NEGROS ISLAND

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INTRODUCTION

Dr. D. S. Rabor of Silliman University, Negros, is engaged in a study of the fauna of Negros Island. Chicago Natural History Museum is co-operating in this, and in the collection of birds that have so far come to the Museum are specimens representing new records for Negros and series of rare or little known species. Other specimens necessitated reviews of certain species. Dr. Rabor had intended to collaborate with me in working on this collection, but as this has been impossible I present these notes. Two new subspecies, representing new species records for Negros, *Rhabdornis inornatus rabori* and *Otus bakkamoena nigrorum*, have already been described elsewhere. For comparative material of certain species I am indebted to Dr. Ernst Mayr, of the American Museum of Natural History, and Mr. H. G. Deignan, of the United States National Museum.

The new records for Negros, while in a way only minor extensions of range, are of more interest than these small extensions might imply. The faunas of some of the islands of the Philippines differ markedly, even when separated by only narrow straits, and absences of species, as well as occurrences, have significance.

The revisions or partial revisions of several species present interesting lights on certain aspects of speciation in the Philippine Islands. In the Philippines proper (excluding Palawan) there are "two large islands, several others of fair size, and innumerable small islands and islets, a total of 7083." (Delacour and Mayr, 1946, p. 2.) The part that the isolation provided by these islands has played in speciation of birds in the Philippines was early recognized by Steere, who wrote (1894, p. 420): "They show isolation to be the first and the necessary step in the formation of species." Steere, also observing how related forms replaced each other from

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island to island, concluded that "no two species structurally adapted to the same conditions will occupy the same area." Both of these ideas subsequently have received much attention. In some cases the geographical representatives inhabiting near-by islands are markedly different, as the representatives on Luzon and Mindoro of *Ninox philippensis* and on Negros and Siquijor of *Loriculus philippensis*; and certain very different, related species such as *Stachyris speciosa*, *S. dennistouni*, *S. nigrocapitata* and *S. capitalis* replace each other, illustrating the part that island isolation has had in allowing speciation to progress.

But this should not be allowed to obscure another aspect of geographical variation that has received less attention in the Philippines. This is the slight difference between some island populations, and the gradual but progressive change from island to island. This type of variation is better recognized on continental areas, but, as the following summaries of examples show (they are treated at length later), it is pronounced in some of the species in the Philippine Islands.

Spilornis cheela: Increase in size in specimens collected from south to north, with a decrease in those from the west central islands, where birds are paler.

Terpsiphone cinnamomea: Increase in wing length, tail length, and especially in length of central streamers of tail in specimens collected from south to north; northern birds are deeper in color than more southern ones.

Nectarinia jugularis: The populations in the central islands are variable, but toward the north the birds become small and pale; to the south they are richly colored but without orange on the breast.

Sarcops calvus: Birds in the west central islands (Negros and Mindoro) show a slight increase in size; in the northern (including Mindoro) and the extreme southern (Sulu) islands the birds are pale-backed; in the central islands (including Negros) they are dark-backed, the darkness reaching its maximum in Samar and Leyte.

Oriolus chinensis: A tendency toward an increase in size in the birds in the extreme northern islands (Fuga, Calayan), in extreme west central islands (Busuanga, Cuyo) and in the extreme south (Sulu); a decrease in brightness of yellow and in width of yellow forehead in populations from north to south.

We obviously have geographical trends in variation here, but not one of them is a simple north to south cline. In *Spilornis*, which approaches it, there is the greatest decrease in size, and a

sudden paling in specimens from the west central islands; *Terpsiphone* also approaches it, but the color cline at least is apparently stepped; in *Nectarinia* clines of different characters extend north and south from the central islands; in *Sarcops* the same is partly true but the clines appear stepped, the end products are very similar, and in the west central islands (Negros and Mindoro) a minor size increase cuts across color variation; in *Oriolus* a north-south color cline, perhaps stepped, exists, but in size there are extremes in three widely separated areas: the north, the extreme west central, and the south. It is very probable that local reversals and irregularities exist on these clines.

All these studies, while made on considerable series, are based on inadequate samples of even all the populations of the medium-sized islands.

The kingfisher, *Halcyon chloris collaris*, was recorded by McGregor (1909, p. 323) on 42 islands (including Palawan), and Delacour and Mayr (1946, p. 135) say it has been recorded from nearly every island, even the smallest. The same is probably true for certain other common species such as *Oriolus chinensis*, which McGregor recorded for 45 islands, and *Cinnyris jugularis*, which he listed for 39 islands. Probably many of the more than seven thousand islands support populations of common widespread birds. Though there may be a certain amount of crossing from island to island, the water barrier surrounding each island provides some isolation. Presumably every island population is slightly different from every other. When our techniques are more refined we probably can demonstrate this.

Thus the Philippines could provide a happy hunting ground for those who believe in naming any population that has a definite range and shows any difference, and at the same time it would provide a nightmare mass of names for a student interested in the intriguing questions of geographical variation involved, and a stultification of the study.

Fortunately the application of names to geographical variants of Philippine birds is nowhere near such a condition. McGregor (1909) gave us a good summary from a specific viewpoint, and Delacour and Mayr (1945, 1946) have reviewed it from a subspecific viewpoint. But that there is much as yet unrecognized variation in Philippine birds can be presumed on theoretical grounds. Below, I have demonstrated some of it for certain species.

In studying variation in Philippine Island birds it would seem advisable to keep the following points in mind:

- (1) Every island population is slightly different from every other population.
- (2) Trends in variation, or clines, exist from island to island.
- (3) These clines frequently may not parallel each other.
- (4) Local reversals or irregularities in clines may occur, as well as steps in the clines.
- (5) Non-clinal variation exists and abruptly differing populations may occupy adjacent islands.
- (6) Possibly populations of some islands are exceptionally variable because occasional crossing of individuals from island to island occurs.
- (7) Occasionally an individual differs strikingly from the population to which it belongs, and more closely resembles some other different-appearing populations.

It is evident that much minor variation can not be indicated in conventional nomenclature. I have applied names to each end of a cline, when the extremes were different enough to separate at least 80 or 90 per cent of the individuals. But I have hesitated to apply names to the intermediate stages in clines; to minor irregularities in clines; to the ends of minor or vague trends, and to geographically isolated populations possessing certain characters in common that separate them from intervening populations. I have attempted to use names only where it seems they will be useful in discussing populations.

Podiceps ruficollis philippensis Bonnaterre

Colymbus Philippensis Bonnaterre, 1791, Tabl. Encyc. Meth., 1, 1790 (1791), p. 58—fresh waters of the Philippines [=Luzon] (Rand, 1948).

Negros: Male adults, 3; male immatures, 2; female adults, 2; female immatures, 1.

Wing: male adults, 103, 107, 108; female adults, 99, 102. Culmen: male adults, 27, 27, 27.5; female adults, 24, 25.

For comparison we have the following measurements:

Mindanao: Wing: male adult, 98; female, 98, 98. Culmen: 24, 25.

Luzon: Wing: male adult, 113; female, 105. Culmen: male, 27; female, 27.

Some of the Negros birds came from an altitude of 3,000 feet, on Lake Balinsasagao.

Though this species has been recorded from Luzon and Mindanao, as well as some intermediate islands, including Guimaras, this is the first record for Negros.

In 1948 (Rand, 1948, p. 1) I separated as *P. r. cotabato* the Mindanao bird from *P. r. philippensis* of Luzon on the basis of smaller wing and bill, and darker coloration above and below. In addition, *cotabato* has less white in the base of the outer web of the secondaries. Of the five adult birds in the present series, four are darker, more blackish on the under parts than two Luzon birds, one is not; compared with two fully adult Mindanao birds, none is as dark. In the amount of white in the base of the outer webs of the secondaries, as seen by lifting the coverts, the condition in the Negros birds is intermediate between the conspicuous white present in Luzon birds, and the near absence of it in Mindanao birds. In wing length the Negros birds are intermediate, but in bill size they are more like Luzon birds. While in most characters the Negros birds are intermediate between Luzon *philippensis* and Mindanao *cotabato*, suggesting that there is a gradual change in characters from north to south through the islands, on bill size they are similar to the former, and in color of under parts are closer to it, so I refer them to *philippensis*.

Besides the fully adult bird, three other stages of plumage are represented in the series: (a) a full-grown young with white breast retaining some juvenile streaked pattern on the head (male, May 22); (b) a bird resembling the adult but with white throat, breast and abdomen, and pale rufous on the side of head and neck (female, December 24); and (c) one very like the adult but with a white lower breast and abdomen, and a few white feathers in the throat (male, May 22).

***Butorides striatus amurensis* Schrenck**

Ardea (Butorides) virescens var. *amurensis* Schrenck, 1860, Reise Amur Lande, 1, pt. 2: 441—Amurland.

Negros, Amio River: 1 male, May 11, 1948.

Wing: 200. Culmen: 76 mm.

Rabor also collected three of the resident race to which the name *B. s. carcinophilus* Oberholser has been shown to apply by Mayr (1943, p. 11), and which measure: wing, male 182, female 167, 171; culmen, male 65, female 65, 65 mm. The specimen of *amurensis* differs from those not only in its larger size, but also in the greener color of the elongated scapular feathers.

This race, a winter migrant from the north, is known to winter in the Philippines and as far south as Celebes, but this appears to be the first record for Negros. The date seems rather late.

***Ixobrychus sinensis sinensis* Gmelin**

Ardea Sinensis Gmelin, 1789, Syst. Nat., 1, pt. 2: 642—China.

Negros: 1 female, February 5, 1950.

Wing: 124.

Though the least bittern is recorded from a number of islands, from Luzon to Sulu, this female sent by Rabor from Negros, seems to be the first record for that locality. From the date it could well be a winter visitor.

***Anas poecilorhyncha luzonica* Fraser**

Anas luzonica Fraser, 1839, Proc. Zool. Soc. London, 1839: 113—Luzon.

Negros, Amio River: Male adults, 8; female adults, 7. April 9–May 18, 1948.

Wing: male, 235, 238, 240, 241, 247, 247, 248, 262; female, 225, 229, 231, 231, 234, 235, 235.

Though this species has been recorded for many localities in the Philippine Islands, the present specimens appear to represent the first record for Negros.

***Hieraaëtus kieneri formosus* Stresemann**

Hieraaëtus kieneri formosus Stresemann, 1924, Orn. Monatsber., 32: 108.

Negros, Zamboanquita: Males, 1. January 23, 1949.

Wing: male, 333 mm.

Though previously known from both Luzon and Mindanao as well as some intermediate islands, this specimen appears to be the first record of the species for Negros. Its small size compares well with published measurements of this race.

***Spilornis cheela* Latham**

The series of six adults and one immature sent by Rabor from Negros necessitates a review of the variation in this species.

The subspecies *S. c. palawanensis*, of Palawan, Busuanga, Calamianes, and Balabac Islands, lacking spots on the upper breast and on the mantle, is quite different from the birds of the rest of the Philippine Islands. Indeed, many authors, including Peters (1931, p. 274) and Swann (1925, p. 168), keep the latter birds as

a separate species under the name *Spilornis holospilus*, not particularly closely associated with *S. cheela*. However, it seems advisable to follow Delacour and Mayr (1945, p. 106) in considering them conspecific.

The geographical variation in these latter birds has not been properly established. Vigors described *holospilus* from near Manila in 1831, and Steere in 1890 described as smaller and paler the bird from Guimaras, Panay and Negros and named it *Spilornis panayensis* (1890, p. 7). Bourns and Worcester (1894, p. 44) wrote that dark and light birds occurred throughout the range of the species, and were unable to find constant size differences. They decided *panayensis* was based on characters due to season and individual variation and not recognizable. McGregor (1909) recognized *panayensis* but was doubtful of its validity. This view Hachisuka (1934, pp. 22, 23) followed, saying *panayensis* was a pale individual variety known from Bohol, Guimaras, Masbate, Mindanao, Negros, Panay, Romblon, Sibuyan and Tablas (evidently from McGregor), and mentioned a *panayensis* type of bird from Davao on Mindanao. Delacour and Mayr (1946, pp. 49, 50) follow, and give *S. h. holospilus* as ranging throughout the Philippines (exclusive of the Palawan group).

However, Grant (1896, p. 527) reviewed the question, listed the measurements of thirty specimens, and concluded that from Luzon south through the western islands to Mindanao and Basilan there was a decrease in size in the populations that were composed of dark birds, and that in Panay, Guimaras, and Negros there was a still smaller and a paler bird, to which the name *panayensis* was applicable. Both Peters (1931, p. 274) and Swann (1925, p. 168) recognized *panayensis*. In 1939 (pp. 76-77) Peters, when discussing birds from Mindoro, Mindanao, and Basilan, remarked that individual variation was great, but that Mindanao birds were larger than those from farther south; lack of critical material prevented him from drawing final conclusions.

Though present material is not extensive—only sixteen birds—it has the advantage of having series from two islands (seven skins from Negros; seven skins from Mindanao; one from Sibuyan; and one from Romblon), allowing an estimate of range of variation.

The wing measurements of the present series plus those of Peters and of Grant are as follows:

Luzon (Grant): male, 13.2, 13.75, 13.9 in. (= 335.2, 348, 353 mm.); female, 14.1, 14.1, 14.4, 14.6, 14.6, 14.8, 15.2, 15.2 in. (= 358.1, 358.1, 365.7, 370.8, 370.8, 375.9, 386, 386 mm.).

Catanduanes (Grant): female, 14.8 in. (= 375.9 mm.).

Marinduque (Grant): male, 13.2 in. (= 335.2 mm.).

Mindoro (Peters): male, 368, 370, 372, 380 mm.

Cebu (Grant): male, 13.2 in. (= 335.2 mm.); female, 13.3, 13.8 in. (= 337.8, 350.5 mm.).

Mindanao (Grant): female, 13, 13.25, 13.6, 13.7, 13.8 in. (= 330.2, 336, 345.4, 347.9, 350.5 mm.). (Peters): male, 338 mm.; female, 338 mm. (C.N.H.M.): male, 334, 338 mm.; female, 343, 350, 352, 358, 367 mm.

Basilan (Grant): female, 12.7 in. (= 322.5 mm.). (Peters): male, 332 mm.; female, 335 mm.

Panay (Grant): male, 12.5 in. (= 317.5 mm.).

Negros (Grant): male, 11.8, 12.3 in. (= 299.7, 312.4 mm.); female, 12.2, 12.2 in. (= 309.8, 309.8 mm.). (C.N.H.M.): male, 311, 324, 326, 328, 330 mm.

Sibuyan (C.N.H.M.): female, 329 mm.

Romblon (C.N.H.M.): male, 319 mm.

The measurements made by the three persons may not be strictly comparable (Grant's notably seem small), but it is evident that there is a decrease in the size of specimens taken from north to south, and further that the birds from the west central islands are smaller than Mindanao birds, as Grant pointed out.

In color the seven Mindanao birds in Chicago Natural History Museum show surprisingly little variation in the dark brown ground color of the under parts, and Grant has shown that his Mindanao birds are similar to Luzon birds. The six adult Negros birds contrast strikingly; four of them are very much paler below, two are only somewhat paler than the Mindanao birds. The Romblon and the Sibuyan birds are very similar to the pale Negros birds.

Present material agrees well with the findings of Grant as to geographical variation: a decrease in size from north to south through the eastern islands, and a further decrease in the west central islands; and a pronounced paling in ventral ground color in the western central islands. It seems advisable to recognize this variation by name. The Philippine races should stand as *palawanensis*, *panayensis* and *holospilus*.

Spilornis cheela palawanensis Sclater is found on the islands of Busuanga, Calamianes, Palawan and Balabac.

Spilornis cheela panayensis Steere is from the west central Philippines, at least Negros, Panay (Grant), Guimaras (Grant),

Sibuyan and Romblon. Peters also includes Tablas, Cebu, Bohol and Siquijor, but not Masbate, which McGregor does include. Differs from *palawanensis* in the presence of white spotting on the upper breast and upper back, in the smaller size, and paler coloration.

Spilornis cheela holospilus Vigors, Philippine Islands from Luzon to Sulu Archipelago, except for the range of the above races, is like *panayensis* in having white spots on the upper breast and back, but larger, and darker below. The decrease in size from north to south does not seem sufficient to warrant dividing this subspecies into large and small forms. The occasional occurrence of a pale *panayensis*-like individual in populations of this subspecies, as Hachisuka recorded for Davao, Mindanao, does not invalidate the separation of the two populations as subspecies.

***Spilornis cheela panayensis* Steere**

Spilornis panayensis Steere, 1890, List Birds and Mammals Steere Exped., p. 7.

Negros: Males, 5.

Wing: males, 311, 324, 326, 328, 330 mm.

***Amauornis phoenicurus javanica* Horsfield**

Gallinula javanica Horsfield, 1821, Trans. Linn. Soc., London, 13, pt. 1: 196, Java.

Negros, Amio: Males, 1; females, 1. May 2, 25, 1948.

Wing: male, 154; female, 138.

Another species widely distributed in the Philippines but hitherto unrecorded for Negros. Five Java males have wings of from 142 to 155 mm., and agree well with the Philippine bird.

***Cuculus fugax pectoralis* Cabanis and Heine**

Hiracoccyx pectoralis Cabanis and Heine, 1863, Mus. Hein., Th. 4, 1862-63, Heft 1, p. 27—Philippine Islands.

Negros, Pagyabonan: Male adult, 1. May 9, 1949.—Amico: Male adult, 1. May 12, 1948.

Wing: 179, 177+ mm.

These two adult males represent the first record of this species for Negros, though it apparently is widespread in the Philippine Islands, from Sulu and Basilan to Luzon. The specimens have wing lengths of 179 and 177+ mm., and the measurements thus are slightly larger than the 171-175 mm. that Mayr (1938, pp. 25-26) gives for this race.

Cacomantis spp. (Philippine Islands)

The treatment of the forms of *Cacomantis* occurring in the Philippine Islands has been varied, as is shown by McGregor (1909, p. 374), who listed only one species in this genus, *C. merulinus*, for the Philippine Islands; Hartert (1925, pp. 164 ff.), in a review of the genus, gives *C. m. merulinus* for the Philippine Islands and Sulu, *C. variolosus sepulcralis* for the Philippines, and *C. v. everetti* for Tawi-tawi, Sulu Islands. Hachisuka (1934, pp. 205-207), however, considered that *merulinus* and *variolosus* were conspecific and listed *C. m. merulinus* as ranging from Basilan to Luzon in the Philippines and *C. m. everetti* from only Sulu (Tawi-tawi). In 1939 Peters (p. 90) showed that the dark-breasted *C. v. everetti* and the pale-breasted *C. m. merulinus* both occurred on Basilan, and were thus to be considered as species, as Hartert had done. Later, Peters (1940, pp. 23-24) gave the range of *C. m. merulinus* as the Philippine Islands, that of *C. v. sepulcralis* as including the Philippine Islands (except Sulu Archipelago), and that of *C. v. everetti* as Basilan and the Sulu Archipelago. However, Delacour and Mayr (1946, pp. 106-107) list only *C. m. merulinus* as occurring throughout the Philippines, and the only form of *C. variolosus* given is *C. v. everetti*, with a range on Basilan and the Sulu Archipelago.

While adequate material is lacking for a critical study of the validity of the forms involved, present data support Hartert's and Peters' view that two species, *C. variolosus* and *C. merulinus*, are widespread in the Philippines.

Cacomantis merulinus merulinus, type locality Panay, is listed in Hartert's review of the genus as ranging in the Philippines and the Sulu Archipelago. He gives the wing length as 98-111 mm., while Peters, listing a Basilan bird, gives the wing length as 100 (male), 102.2, 99.3, 99.8 (female). We have a single example of this gray-breasted bird with pale rufous belly. It was collected at Solsona, Luzon, December 19, 1923, by McGregor and others and is a male, with wing of 112 mm.

Cacomantis variolosus everetti, type locality Tawi-tawi, is characterized by Hartert as being very close to *sepulcralis* but with no gray on the throat. Peters extended its range to Basilan on the basis of an unsexed adult, with a wing of 113.5 mm.

Cacomantis variolosus sepulcralis S. Müller

Cuculus sepulcralis S. Müller, 1843, Verh. nat. gesch. Nederl., Land-en Volkenk., pt. 6, p. 177, note.

Negros: Female adults, 2.

Wing: female, 113, 113 mm.

Hartert and Peters have admitted this race for the Philippines; Hachisuka, regarding *C. variolosus* and *merulinus* as conspecific, allows only *C. m. merulinus* for the Philippines north of Sulu Archipelago while Delacour and Mayr do not list any representative of *C. variolosus* from the main Philippine Islands. We have four specimens in addition to those from Negros: Mindanao, 1 male adult (wing 122 mm.); Luzon, 1 male adult, 1 male subadult, 1 female adult (wing, male adult 124; male subadult 116; female adult 116 mm.). McGregor listed only *C. merulinus* from the Philippines but he evidently had specimens of this species, as two of the above specimens were collected by him in 1903.

The present specimens are all plainly separable from the single available Philippine specimen of *merulinus* in the much darker chestnut of the under parts, the chestnut (not gray) upper breast, the darker (less pale gray) forehead and the bluer back. The wing length of the females is close to that of the male *merulinus*. There is considerable variation in this series: the two Luzon and the Mindanao males and the Luzon female all have a distinct gray area on the throat, thus differing from the description of *everetti*. The two females from Negros, however, have only a little gray in the chin. On the rest of the under parts the Mindanao and one Negros bird are rather dark and richly chestnut; the other Negros bird and the Luzon birds are considerably paler chestnut.

Eudynamys scolopacea mindanensis Linnaeus

Cuculus mindanensis Linnaeus, 1766, Syst. Nat., ed. 12, p. 169—Mindanao.

Negros, Mabaha, Bais: Male adults, 2; male immature, 1. April 26, 28, 1949; May 15, 1949.

The immature bird, taken May 15, has molted into nearly complete glossy black adult plumage, but though no molt is in progress it still retains some brownish black, immature remiges and rectrices, and a few dull black, worn wing coverts.

From Mindanao (June 21, 1948), we have an immature female in almost wholly immature plumage, which is completely black, duller and less glossy than that of the adult male. Only on the abdomen, breast and under wing coverts the post-juvenile molt has started and a few adult female type of feathers, pale rufous, or whitish, barred with blackish, are growing in.

This indicates that the young of this Philippine subspecies, both male and female, are completely black like the adult male. A similar situation has been recorded for India and correlated there with this cuckoo's habit of laying its eggs in crows' nests, and the need for the young cuckoos to resemble young crows.

Tyto capensis amauronota Cabanis

Strix amauronota Cabanis, 1872, Jour. Orn., 20: 316—Philippines.

Negros, Amio: Female adult, 1. May 27, 1948.

Wing: 365 mm.

Though known from Luzon and Mindanao as well as some intermediate islands, this is the first record of this grass owl for the island of Negros. For reasons for using the above specific name instead of *T. longimembris* see Amadon and Jewett (1946, pp. 551 ff.), who combine the grass owls of Africa and those of the Indo-Australian area under the oldest name, *capensis*.

Caprimulgus indicus jotaka Temminck and Schlegel

Caprimulgus jotaka Temminck and Schlegel, 1847, Fauna Japan, Aves, p. 37—Japan.

Negros, Dayongan: Female [= male], 1. November 18, 1947.

Wing: 229. Tail: 140 mm.

This migrant has been recorded only from Palawan and the extreme northern part of the Philippine Islands, so that this record, new to Negros, represents a southeastern extension of its known wintering range.

Chaetura gigantea dubia McGregor

Chaetura dubia McGregor, Bureau Gov. Labs., Manila, No. 34, p. 15, pl. 12—Mindoro.

Negros, Lake Balinsasayao: Males, 4; females, 4. May 21–28, 1949.—Santa Catalina: 2 males. December 30, 1948.

Wing: male, 212, 214, 216, 216, 218, 219; female, 211, 211, 214, 216 mm. We also have three other Philippine birds: Luzon, male, 222+; female, 226; Mindanao, female, 217 mm.

This fine series is of a species rare in collections. The Palawan representative of this species, *C. g. gigantea*, of which we have three from Palawan and one from Culion, is quite different in having a much paler back and being much paler below, almost like *C. g. indica*, and in lacking any pale loreal spot. The representative to

the south is *C. g. celebensis*, but its characters contrasted with those of the Philippine bird have not been adequately pointed out. We have none of the five known specimens. From the descriptions it appears to be smaller (wing, male 203, female 188) and to be greenish black rather than purplish black.

The early records of this species from Negros were called *C. celebensis*, but Riley (1924, p. 56) has compared two Basilan birds (wing 215, 220) with a Mindoro bird (topotypical *dubia*; wing 223) and found them identical. However, the measurements indicate that southern Philippine birds may average slightly smaller than those from northern Philippines. Our one Mindanao specimen has the body more dead black, with less of a purple gloss than in Negros material, but the importance of this is not clear.

All of our six females and most of our seven males show at least some buffy or brownish tinge to the loreal spot, but in some cases it definitely appeared to be adventitious staining and this was demonstrated to be the case by washing one specimen, when the brownish color disappeared. The sexes appear to be alike, except for the average slightly smaller size of the female.

Wear and fading cause a great change in color in these birds. All the May birds are molting. The back has a mixture of old worn feathers (dull brownish at the tips, then with a band of iridescent purplish black, where they have been protected by the next feather) and new feathers (purplish black to the tip). The difference due to fading is usually less pronounced on the under parts, but in one male the worn brown tips to the feathers of the under parts are very conspicuous.

This change in color is evidently rapid, for though the Mindanao bird taken in August is still blackish above and below, the two December birds from Negros are already distinctly brownish above, foreshadowing the very brown, worn condition of the tips of the old feathers still retained in the molting May birds.

***Chaetura picina* Tweeddale**

Chaetura picina Tweeddale, 1878, Proc. Zool. Soc. London, 1878: 944—Mindanao.

Negros, Lake Balinsasayao: Males, 4; females, 7. May 22-29, 1949.—Sicopon River: Males, 1. December 22, 1947.

Wing: males, 162, 167, 169, 174; females, 160, 165, 166, 167, 169, 169, 169 mm.

The splendid series of this rare, long-winged, spine-tailed swift provides a new record for Negros. Hitherto this swift was known only from Mindanao, Leyte and Cebu in southern and central Philippines.

Though some of the May birds are molting, the molt is much less conspicuous than it is in the related *C. g. dubia*, indicating perhaps a different way of life. In the December bird in fairly fresh dress the gloss of the plumage is quite greenish; in the May specimens the old worn feathers are considerably more purplish, but again the difference between fresh and worn plumage is not nearly as great as it is in *C. g. dubia*. Aside from differences due to wear there is little variation in this series.

Hemiprocne comata major Hartert

Macropteryx comata major Hartert, 1895, Nov. Zool., 2: 473—Luzon.

Negros, Inubungan: Male adult, 1; female adult, 1. December 20, 26, 1948.—Amio River: Female adult, 1. May 18, 1948.—Sicopon River: Male immature, 1. December 22, 1947.—Lake Balinsasayao: Male immature, 1. June 1, 1949.

Wing: male adults, 140; female adults, 141, 144.

Color variation within the Philippine Islands seems insufficient for separating subspecies, but there seems to be a gradual change in size, decreasing from north to south. Material in Chicago Natural History Museum gives the following measurements: Basilan, 135; Mindanao, female, 132; Mindoro, female, 138; Luzon, females, 149, 149, 139, 147, 148 mm. The Negros birds are included in the part of this cline with the larger size.

Halcyon lindsayi moseleyi Steere

Halcyon moseleyi Steere, 1890, List Bds. Mamms. Steere Exped., p. 11.

Negros, Lake Balinsasayao: Males, 1. May 24, 1949.—Pagyabanan: Males, 1; females, 3. May 8–12, 1948, 1949.—Talostos: Females, 1. May 17, 1948.

Wing: males, 107, 107; females, 110, 112, 112, 114 mm.

The above series of this well-marked endemic Negros race represents one of the rare birds of the Philippines.

Stachyris speciosa Tweeddale

Dasycrotapha speciosa Tweeddale, 1878, Proc. Zool. Soc. London, 1878: 114—Negros.

Negros, Lake Balinsasayao: Females, 2. June 1, 4, 1949.—Pagyabanan: Males, 3; females, 1. May 8–12, 1949.—Inubungan: Males, 1; females, 1. December 20, 1948.—Karahaan: Females, 2. May 10, 23, 1948.—Ugdangan: Males, 1. May 5, 1948.

Wing: males, 68, 69, 69, 69, 70; females, 66, 67, 67, 68, 68, 69 mm.

This is another fine series of a rare Negros endemic. Except for the average slightly smaller size of the female the sexes are alike. The width of the yellow forehead varies somewhat, its color varies from orange yellow to clear yellow, and the black of the throat may be heavily or lightly marked, but otherwise there is little individual variation in this series.

Gerygone sulphurea Wallace

Gerygone sulphurea Wallace, 1864 (1863), Proc. Zool. Soc. London, 1863: 490—Solor.

Negros, Dumaquete: Males, 1. February 5, 1950.

Wing: 53 mm.

This specimen, a male in very worn plumage, but beginning to molt, seems to be the first record for the island though the species has been collected previously in both northern and southern Philippines.

Megalurus palustris forbesi Bangs

Megalurus palustris forbesi Bangs, 1919, Proc. New Eng. Zool. Club, 7: 5—Luzon.

Negros, Sico pon River: Females, 1. December 27, 1947.

Wing: 86 mm.

Though fairly widespread in the Philippines, this grass warbler was hitherto unrecorded for Negros.

Phylloscopus borealis kennicotti Baird

Phylloscopus kennicotti Baird, 1869, Trans. Chicago Acad. Sci., 1, pt. 2: 313—St. Michael's in Norton Sound, Alaska.

Negros, Inubungan, Santa Catalina: Males, 2. December 18, 26, 1949.—Tolong: Males, 1. December 28, 1948.

Wing: 63.5, 64, 65 mm.

Out of the seven specimens Rabor sent from Negros, four had wings of 68, 68, 69, 70 mm. and are considered to represent *P. b. borealis*. The above three, because of their small wings, are considered to represent *kennicotti*.

Parkes and Amadon (1948, pp. 86, 87) were the first to point out that *kennicotti* occurred in the Philippines, and they recorded it from Palawan and Luzon. The present specimens thus extend its range south to Negros.

Terpsiphone cinnamomea Sharpe

Terpsiphone cinnamomea 1877, not *T. unirufa* 1937, nor *T. rufus* Gray, 1843, preoccupied by *T. rufa* Swainson (= *T. mutata*) 1837, should be used as the specific name of this bird (see Salomonsen, 1937).

A fine series of this species sent by Rabor from Negros showed surprisingly little individual variation and gave a sound starting point for studying the geographical variation of the species. I borrowed the available material from the American Museum of Natural History through the kindness of Dr. Mayr, and that from Washington through the kindness of Mr. Deignan. Though the combined material (58 specimens) is too scanty for a final review, some points emerge.

In color, adult males from Luzon (two specimens), Lubang (one), Sibuyan (one), Romblon (one) and Basilan (one) fall within the moderate range of variation of the eleven Negros birds. The Cebu (one specimen), the Mindanao (three) and Tawi-tawi, Sulu (two), six specimens in all, agree in representing a lighter, paler series, whose complete range of variation is represented by the three Mindanao birds. However, compared with the above listed darker series there is some overlap. The palest bird from the northern darker series is from Negros, and the darkest one of three Mindanao specimens is very similar to the palest Negros bird. The three Talaut birds are as dark below as the Mindanao birds, but the upper parts, especially the head and neck, are somewhat paler than in any of the Philippine birds.

Wing length is as follows: Luzon, 95, 96; Lubang, 98; Romblon, 99; Sibuyan, 101; Negros, 90–96 (av. 93.2); Cebu, 96; Mindanao, 94, 95, 95; Basilan, 92; Sulu, 88, 92; Talaut, 92, 93.

Tail length, exclusive of the central streamers, is as follows: Luzon, 119, –; Lubang, 98; Romblon, –; Sibuyan, 101; Negros, (10) 81–95 (av. 87.1); Cebu, 91; Mindanao, 83, 84, 88; Basilan, 88; Sulu, 83, 78; Talaut, 85, 85, 85.

The extent of the central tail feathers beyond the next longest tail feathers is: Luzon, 40, –; Lubang, 105; Romblon, –; Sibuyan, 95;

Negros, (10) 11-26 (av. 17.6); Cebu, 9; Mindanao, 5, 6, 8; Basilan, 7; Sulu, 5, 7; Talaut, 2, 5, 6.

The small number of male immatures, female adults and female immatures prohibits much comment. Five immature males from Basilan have white bellies, like the figured type of *cinnamomea*, a sixth is darker and has the belly pale rufous, as does a Tawi-tawi, a Panay, and a Cebu specimen.

In the adult females six Negros birds, two Luzon, and one Lubang bird are dark, while one Cebu, one Mindanao, one Basilan and one Sulu bird are somewhat paler, the Basilan bird being even almost buffy on the belly; a Talaut bird is slightly paler again but has the belly pale rufous as in the rest of the series except the Basilan bird.

Two immature females from Sibuyan and one from Romblon have the belly strongly buffy; one from Mindanao and two from Basilan have the belly buffy whitish.

The variations discussed above for the adult male may be summarized as (1) an increase in wing length; (2) an increase in tail length (exclusive of central streamers); (3) a great increase in the length of the central tail feathers; and (4) a deepening of the rufous color as one goes from south to north.

It is possible that various local reversals in the main trends occur, that in places the cline is stepped, that locally individual variation may be much greater than present material indicates. Conceivably various stages on the general cline could be separated as named subspecies, but the advisability of this is doubtful. Three races are recognized.

In *Terpsiphone cinnamomea cinnamomea* Sharpe the birds are usually paler, and adult males have central tail feathers projecting little beyond the next pair; this is the form from the Sulu Archipelago and southern Philippines north to Mindanao.

The type of the species, which Sharpe figured, is obviously a young bird. Hachisuka (1935, p. 324) gives the type locality as Isabela, Basilan, but Steere, the collector of the type (Sharpe, 1877, p. 328) says, "I only saw one specimen It was shot . . . in the interior of the island of Basilan, at some distance from the sea."

Terpsiphone cinnamomea talautensis Meyer and Wigglesworth differs from *T. c. cinnamomea* in having the upper parts slightly paler, especially on the head and neck; from Talaut Islands, Celebes.

This is an ill-defined race and its characters are a continuation of the cline from the Philippine Islands. Were it not so separated

geographically from the rest of the range of the species, its recognition might be questioned.

***Terpsiphone cinnamomea unirufa* Salomonsen**

Terpsiphone unirufa Salomonsen, 1937, Bull. Brit. Orn. Cl., 58: 15.

Negros: Males, 9; females, 5.

Wing: males, 90–96 mm. (av. 93.2 mm.).

Tail: males, 81–95 mm. (av. 87.1 mm.).

The dark birds and the adult male having elongated central tail feathers range from the northern Philippines south to Negros. If it can be shown that all Luzon adult males have much elongated central tail feathers, the Luzon population could perhaps with propriety be separated from that of Negros, in which the males have much less projecting streamers.

***Nectarinia jugularis jugularis* Linnaeus**

Certhia jugularis Linnaeus, 1766, Syst. Nat., ed. 12, p. 185—Luzon, Philippine Islands.

Negros: Male adults, 13, immature, 1; females, 5.

***Aethopyga flagrans guimarasensis* Steere**

Cinnyris guimarasensis Steere, 1890, List of birds and mammals, Steere Exped., p. 22—Guimaras.

The original spelling of the subspecies name is *guimarasensis*, not *guimarenses*.

In identifying the three males and two females that Rabor sent from Negros, the color of the mantle of the males seemed so far removed from the blood red described for *A. f. guimarasensis* that I borrowed the available material in the American Museum and the National Museum, in all, eight birds from Luzon (*A. f. flagrans*), one from Guimaras and five from Panay (*A. f. guimarasensis*). The Guimaras adult male (topotypical), the two Panay males, and the three Negros males agree fairly well among themselves, and differ from *A. f. flagrans* from Luzon in having the feathers of the nape and hindneck black tipped with dull brownish red, sometimes tinged olive (not pure yellowish olive), the mantle more or less strongly washed with the same dull brownish red (not bright yellowish orange), the lower breast and abdomen brighter, clearer yellow (not pale olive yellow), the central orange area of the lower breast and abdomen brighter, clearer yellow (not pale olive yellow) and the central

orange area of the lower breast more extensive, slightly paler, and contrasting less with the rest of the under parts. The variation in sheen of the metallic plumage, purple to blue, is not correlated with geography, and is probably due to wear.

Compared with *A. f. flagrans* the females of *A. f. guimarasensis* in fresh plumage differ chiefly in that the under parts are much yellower generally, and the central part of the breast is much brighter. The two Negros females differ from the three Panay females rather strikingly, for the throat and sides of the neck are much clearer gray (not heavily washed with yellowish olive) and the top of the head is deep gray (not olive). However, the Negros birds are much worn, and the Panay birds in fresh plumage; the observed difference I attribute to wear.

Sarcops calvus Linnaeus

A series of eight adults sent by Rabor from Negros all have considerable black on the back, not quite as much as does a Leyte bird, but slightly more than do eight Mindanao birds (six from the Davao area, two from Ayala). However, compared with eight Luzon birds, and three Mindoro birds, all of which have silvery gray backs, the Leyte, Negros and Mindanao birds can be grouped together as representing one subspecies.

Gilliard (1949b) has reviewed the variation in this species, showing that Grant was correct in considering the distribution of the silver-backed and the darker-backed birds to be sufficiently correlated with geography to use in recognizing two races. I had already come to the same conclusion in studying the material in Chicago Natural History Museum. But when Gilliard recognizes the three named races and goes farther and shows there are six populations in all in the Philippines, names one of them, and implies that two others may be worthy of naming, I think he has gone too far in segregating and naming populations, but not far enough in indicating variation.

Using Gilliard's data and the twenty-nine specimens in Chicago Natural History Museum I come to the following conclusions:

(1) Wing length: There is a slight increase in size of birds in the west central Philippines (Mindoro and Negros; see table).

(2) Tail length: As with the wing, there is a slight increase in size in Mindoro and Negros birds. While the difference is greater than in the wing measurements, the tail length tends to be much

more variable. This is shown in the Negros birds by the tail measurements, which overlap the tail measurements of both Mindoro and Luzon birds in Chicago Natural History Museum material.

(3) Gilliard records that Sulu Island birds have less gray tipping to the undertail coverts. As he did not name these birds on the basis of the five specimens examined, while he did name the four Mindoro birds, I do not accept his new race; I judge this variation is slight indeed.

(4) Gilliard recorded "the white central shaft streaks [on the throat] more profuse in full adult birds" from Mindoro. This seems the result of a misapprehension. The white lines in the throat of *Sarcops* are not shaft stripes, broadening at the tip; each is a single filoplume, branching near the tip. They appear to be easily affected by wear, and are only pronounced for a short period. Three Mindoro birds in Chicago Natural History Museum do not have these white lines more profuse than do central Luzon, Negros and Mindanao birds.

(5) Color of back: This is a conspicuously variable character and correlates with geography. The birds with the most deeply and most extensively black-colored backs appear to come from the central eastern Philippines, Samar and Leyte; to the east, south, and north the intensity and the extent of the black on the back decreases, reaching a silvery gray condition in Mindoro, central and northern Luzon, and Sulu Island. Apparently this cline is stepped, for in southern Luzon both types are recorded; also occasional specimens of one type are found in the range mostly occupied by the other, as, for example, a silvery-backed specimen from Basilan and a dark-backed specimen from Catanduanes (Gilliard, 1949b, p. 3).

Ignoring *S. lowei* Sharpe from Sibutu, whose status is doubtful, we have (a) a slight increase in size (both wing and tail) in the birds of the central west Philippines (Negros and Mindoro), and (b) a decrease in intensity of pigmentation in the back in specimens from the east central islands to those from the west central (Negros), still more to those from the south and north islands—a decrease that apparently is not all on a steady cline.

Now as to the number of names to use in indicating this variation: There is little doubt that the dark-backed forms should be separated from the light-backed forms. It does not seem necessary to recognize by name the fact that Negros birds are slightly paler than Samar birds, or that Mindanao birds are slightly paler than

Negros birds; nor are size differences great enough to use in recognizing races.

Sulu birds are more like central Luzon and Mindoro birds than they are like those of intervening islands. However, to use geography almost entirely in recognizing races seems inadvisable. I recognize *Sarcops calvus calvus* Linnaeus and *S. c. melanonotus* Grant. *S. c. mindorensis* Gilliard is referred to the synonymy of *calvus calvus*. This is the subspecies with a silvery gray back, from northern and central Luzon, Mindoro, and the Sulu Islands.

***Sarcops calvus melanonotus* Grant**

Sarcops melanonotus Grant, 1906, Bull. Brit. Orn. Club, 16: 100.

Negros: Adults, 7.

Tail: 111, 112, 113, 114, 116, 120 mm.

The subspecies *melanonotus* is the dark-backed form known from Samar, Leyte, Mindanao, Negros, and Basilan.

Measurements (adults, C.N.H.M.).—Luzon, Abra Province: wing, 128, 129, 133, 133, 133; tail, 107, 111, 111, 112+. Luzon, Benguet: wing, 129; tail, 108. Mindoro: wing, 132, 132, 135; tail, 115, 117, 120. Leyte: wing, 135; tail, 105. Mindanao, Davao area: wing, 125, 127, 129, 130, 134, 137; tail, 101, 102, 105, 106, 107, 111. Mindanao, Ayala: wing, 124; tail, 86, 101.

***Oriolus chinensis suluensis* Sharpe**

Oriolus suluensis Sharpe, 1877, Cat. Birds Brit. Mus., 3: 205.

Negros: Males, 6; females, 1.

Previous to identifying the three adult males sent from Negros by Rabor, I had worked out the variation of this species with the help of the material in the United States National Museum. Since then, Gilliard (1949a) has revised these orioles.

My understanding of the variation in these birds accords in part with Gilliard's, but I find additional variation, and find myself in disagreement with him in the allocation of names. Individual variation is considerable in color and in size, and series must be used in evaluating variation.

In brief, variation is as follows:

(1) A tendency for an increase in size of birds in the extreme northern islands (in Fuga and Calayan Islands), in Busuanga and Cuyo Islands, and in Sulu Islands.

(2) A tendency for an average decrease in the width of the yellow in the forehead in populations from north to south.

(3) A tendency for a decrease in the width of the yellow tip to the central rectrices in populations from north to south.

(4) The females from the south (Mindanao and Basilan) lack the yellow tips of the secondaries that characterize more northern females.

(5) The southern females also average more greenish on the back, and have more green in the tail.

(6) Bright yellow males are more common in the northern populations.

Some of these data are represented in the attached table.

Gilliard separates the Philippine birds (exclusive of *O. c. palawanensis* of Palawan) into five races, using the characters cited below:

(1) *Oriolus chinensis fugaensis* of Fuga Island like *O. c. chinensis* but with more extensive yellow on forehead (30 mm. wide) and larger wings (159 mm.). Our material shows an average larger size of birds in these far northern islands, but not a wider yellow forehead.

(2) *Oriolus c. chinensis* of central Luzon, male, wing 151.5-156, forehead patch never more than 23 mm. wide.

(3) *Oriolus chinensis sorsogonensis* of southern Luzon, Tayabas and Mindoro, like *chinensis* but with a narrower yellow forehead (maximum 16 mm.) and larger size (male, wing 154-164 mm.). Our material supports the postulated difference in the width of the forehead, but not the size, for we have specimens from as far north as Albay Province with a wing of 161 mm.

(4) *Oriolus chinensis yamamurae* of Basilan, Mindanao, Negros and Samar Islands; contrasted with all the above, characterized by lacking yellow tips to the primary coverts and inner secondaries. Our Mindanao birds compared with Luzon *chinensis* also differ in the average lesser yellow on the forehead (see table) and less yellow on the tips of the central rectrices; and in the female in lacking the yellow tips to the secondaries; in the average more greenish back, and the more frequent occurrence of green in the tail. The males also are less frequently golden yellow than are the northern birds.

(5) *Oriolus c. suluensis* of Sulu Island, characterized by a much longer tail (111-118 mm.) but not larger size (male, wing 148-156.5). However, Meinertzhagen (1923) gave the wings of six

Sulu males as 152, 161–170, indicating that this is a large bird, like those from the islands north of Luzon, and of Busuanga and Cuyo.

The advisability of using five names for this series of what are for the most part north to south representative populations is doubtful. In color there seems no justification. Size more evidently varies geographically, but a number of considerations weigh strongly against using this. According to Gilliard, his *sorsogonensis* from southern Luzon is larger than central Luzon birds, but the largest Luzon bird in Chicago Natural History Museum (wing 161) is from Albay, farther north; this could be construed as the large race "*fugaensis*" also occurring on northern Luzon, but there are also large birds, wing up to 164 and 168 mm., on Busuanga and Cuyo Island, and up to 164 mm. on Panay. The wing measurements of Gilliard's Sulu Island birds are only 148–156.5, while Meinertzhagen gave 153, 160–170 for Sulu Island, and when these figures are combined they give a range of variation of 148–170 for Sulu birds, a range that includes all Gilliard's measurements for the Philippines and all but one measurement (one from Calayan, wing 180 mm.) of the birds in Chicago Natural History Museum. While average measurements do seem to vary, individual variation is great, and the average extremes in size in a number of places do not seem to lend themselves to use in defining races.

The following arrangement with only two subspecies in the Philippines proper, and a third from Palawan, is proposed:

(1) *Oriolus chinensis palawanensis* Tweeddale, restricted to Palawan; characterized by the wide yellow band on the forehead in the male, while the female overlaps in characters with those of the north Philippine populations. Meinertzhagen (1923, p. 73) has already commented on the overlap in characters between birds from Palawan, and those from Negros and Luzon.

(2) *Oriolus chinensis chinensis* Linnaeus. Northern Philippine Islands, south at least to Mindoro and southern Luzon and also Calamianes and Cuyo; separable from *palawanensis* by a moderate width of the yellow on the forehead. Within this group there is an increase in size in two places: in the islands north of Luzon (*fugaensis* of Gilliard) and in Calamianes and Cuyo; and from Gilliard's data, in the southern part of the range there is a decrease in width of the yellow forehead (*sorsogonensis* Gilliard) a foreshadowing of the condition in the next race to the south.

(3) *Oriolus chinensis suluensis* Sharpe. The southern Philippines, north at least to Mindanao. This race is characterized by

Oriolus chinensis: VARIATION

Males (U.S.N.M. and C.N.H.M.)

Locality	Wing	Extent of yellow on forehead	Width of yellow tip to central rectrices	Extent of yellow on outer web of outer rectrices ¹
Palawan.....	156	23	7	47
Calayan.....	180	16	8	61
Fuga.....	167	20	7	50
Luzon				
Abra Province...	161	10	2	35
Manila Bay area.	148, 150, 151, 157, 158, 159, 160	12, 14, 16, 16, 19, 19, 20	5, 6, 6, 6, 7, 9	41, 41, 43, 44, 45, 45
Mindoro.....	149, 159, 160	12, 14, 18	4, 6	35, 40, 43
Busuanga.....	156, 161, 164	14, 15, 16	4, 7, 10	41, 60, 70, 80
Cuyo.....	155, 168	10, 15	4, 9	40, 80
Panay.....	156, 164	16, 17	1, 2	36, 38
Negros.....	153, 157, 163	8, 8, 14	2, 2, 2	35, 54
Siquijor.....	156, 157	10, 12	6	56, 62
Ticao.....	160	9	5	40
Samar.....	158, 159	9, 11	1, 2	27, 50
Mindanao.....	(9) 152-159 (av. 156)	(9) 7-14 (av. 10)	(9) 1-5 (av. 2)	(9) 33-54 (av. 43)

¹ Measured along shaft.

Females (U.S.N.M. and C.N.H.M.)

Locality	Wing	Extent of yellow on forehead	Width of yellow tip to central rectrices	Extent of yellow on outer web of outer rectrices ¹
Palawan.....	153	20	4	47
Fuga.....	163	18	6	42 ✓
Luzon				
Ilocos Norte.....	150, 150	16, 20	3	24, 30
Taal Volcano....	150	17	6	33
Sorsogon.....	154	13	2	31
Lubang.....	154	19	3	45
Mindoro.....	158	12	7	34
Busuanga.....	154, 160	18, 23	5, 2	41, 51
Cuyo.....	158, 167	12, 15	5, 5	30, 47
Panay.....	155		0	20
Negros.....	153	20	2	38
Samar.....	155	14	3	44
Mindanao.....	(9) 147-156 (av. 151)	(9) 10-15 (av. 12)	(9) 0-4 (av. 2)	(9) 23-42 (av. 34)
Basilan.....	152	18		28
Sibutu.....	160	15	1	45

¹ Measured along shaft.

the decrease in the yellow on the forehead, the lesser extent of yellow on the tips of the central tail feathers, the average more greenish back, and the more frequent occurrence of green in the tail. The female lacks the yellow tips to the secondaries, and the males are less frequently golden yellow than are Luzon males.

The birds from the central Philippine Islands need to have their variation studied by series. The few specimens examined indicate intergradation between north and south populations though populations are variable.

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